SIEMENS

Product data sheet   **6ES7316-2AG00-0AB0**

SIMATIC S7-300,
CPU 316-2DP CPU WITH INTEGRATED 24 V DC POWER SUPPLY,
128 KBYTE WORKING MEMORY 2ND INTERF. DP-MASTER/SLAVE

Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Input current	
Rated value at 24 V DC	1000 mA
Inrush current, max.	8 A
Power losses	
Power loss, max.	8 W
Memory	
Work memory	
Integrated	128 kbyte ; 128 KB / 42K instructions RAM (integrated)
Load memory	
expandable FEPROM	Yes ; Flash-EPROM
expandable FEPROM, max.	4 Mbyte
integrated RAM, max.	192 kbyte
Backup	
present	Yes
with battery	Yes ; all blocks
without battery	Yes ; 4 KB: bit memory, counter, times and data
CPU processing times	
for bit operations, typ.	0.3 µs
for bit operations, max.	0.6 µs
for word operations, typ.	1 µs
for fixed point arithmetic, typ.	2 µs
for floating point arithmetic, typ.	50 µs
for timer/counter operations, typ.	12 µs
CPU-blocks	
DB	
Number, max.	511

Size, max.	16 kbyte
FB	
Number, max.	256
Size, max.	16 kbyte
FC	
Number, max.	256
Size, max.	16 kbyte
OB	
Description	see instruction list
Size, max.	16 kbyte
Number of free cycle OBs	1 ; OB 1
Number of time alarm OBs	1 ; OB 10
Number of time interrupt OBs	1 ; OB 35
Number of process alarm OBs	1 ; OB 40
Number of startup OBs	1 ; OB 100
Nesting depth	
per priority class	8
Counters, timers and their retentivity	
S7 counter	
Number	64
of which retentive with battery	
can be set	Yes
lower limit	0
upper limit	63
of which retentive without battery	
can be set	Yes
lower limit	0
upper limit	63
Counting range	
lower limit	1
upper limit	999
S7 times	
Number	128
of which retentive with battery	
can be set	Yes
lower limit	0
upper limit	127
of which retentive without battery	

can be set	Yes
lower limit	0
upper limit	127
Time range	
lower limit	10 ms
upper limit	9990 s
Data areas and their retentivity	
Flag	
Number, max.	256 byte
Retentivity available	Yes ; MB 0 to MB 255
of which retentive with battery	0 to 2047 (M 0.0 to M 255.7, adjustable)
of which retentive without battery	0 to 2047 (M 0.0 to M 255.7, adjustable)
Address area	
I/O address area	
Inputs	2 kbyte
Outputs	2 kbyte
Process image	
Inputs	128 byte
Outputs	128 byte
Digital channels	
Inputs	16384
Outputs	16384
Inputs, of which central	1024
Outputs, of which central	1024
Analog channels	
Inputs	1024
Outputs	1024
Inputs, of which central	256
Outputs, of which central	128
Hardware configuration	
Number of modules per DP slave interface, max.	64
Expansion devices, max.	3
Connectable programming devices/PCs	PGs/PCs with STEP 7 connectable via MPI interface
Number of DP masters	
Integrated	1
Via CP	1 ; CP 342-5
Number of operable FMs and CPs (recommended)	
FM	8

CP, point-to-point	4
CP, LAN	2
Rack	
Modules per rack, max.	32
Time of day	
Clock	
Hardware clock (real-time clock)	Yes
Interfaces	
MPI	
Cable length, max.	9100 m ; without repeaters: 50 m; with 2 repeaters: 1100 m; with 10 repeaters in series: 9100 m; via fiber optic cable: 23.8 km (with 16 star hubs or OLMs)
1st interface	
Functionality	
MPI	Yes
MPI	
Number of nodes, max.	32
Transmission rate, min.	19.2 kbit/s
Transmission rate, max.	187.5 kbit/s
Services	
PG/OP communication	Yes
Global data communication	Yes
S7 basic communication	Yes
S7 communication	Yes
2nd interface	
Functionality	
DP master	Yes
DP slave	Yes
DP master	
Number of DP slaves, max.	124
Services	
Equidistance mode support	Yes
Activation/deactivation of DP slaves	Yes
Direct data exchange (slave-to-slave communication)	Yes ; Transmitter and receiver
User data per DP slave	
User data per DP slave, max.	244 byte
Communication functions	
PG/OP communication	Yes

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Global data communication	
supported	Yes

S7 basic communication	
supported	Yes

S7 communication	
supported	Yes
as server	Yes

S5-compatible communication	
supported	Yes ; via loadable blocks

Standard communication (FMS)	
supported	Yes ; via loadable blocks

Number of connections	
overall	
of which dynamic	8
of which static	4

Configuration	
Configuration software	
STEP 7	Yes ; V5.0
programming	
Command set	Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, floating point arithmetic, jump functions
Nesting levels	8
Program organization	Linear, structured
System functions (SFC)	Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions
Programming language	
LAD	Yes
FBD	Yes
STL	Yes
SCL	Yes
CFC	Yes
GRAPH	Yes
HiGraph®	Yes
Software libraries	
Process diagnostics	Yes
Software controller	Yes ; depending on the required memory space and the resulting execution time
Know-how protection	

User program protection/password protection	Yes
Cycle time monitoring	
lower limit	1 ms
upper limit	6000 ms
can be set	Yes
preset	150 ms
Dimensions	
Width	80 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	530 g ; Memory card 16 g
Status	Sep 11, 2014